ASSIGNMENT 13

Textbook Assignment: "Printers," chapter 12, pages 12-1 through 12-15; and "Data Conversion Devices and Switchboards," chapter 13, pages 13-1 through 13-5.

13-1. Printers that use pins or hammers to strike an inked ribbon to transfer characters to paper are classified as which of the following types?

1. Impact printers
2. Nonimpact printers
3. Thermal printers
4. Laser printers

13-2. A predefine table of characters that can be printed by a printer is known as the

1. print head
2. character set
3. printer code
4. character library

13-3. The 8-bit printer codes that define the alphanumeric characters of the standard English alphabet are contained in which of the following character sets?

1. American National Standards Institute (ANSI) character set
2. Computer Institute character set
3. Institute of Electrical and Electronics Engineers (IEEE) standard character set
4. American National Standard Code for Information Interchange (ASCII) character set

13-4. Standard printer character codes contain a total of how many data bits?

1. Five
2. Six
3. Seven
4. Eight

13-5. The ASCII decimal value 66 represents which of the following characters?

1. A
2. a
3. B
4. b

13-6. The ASCII decimal values 128 through 255 are used for which, if any, of the following functions?

1. Alternate character set
2. Control codes
3. Lowercase letters of the main character set
4. None of the above; they are undefined and have no meaning

13-7. The type of characters that a printer can print is dependent on which of the following factors?

1. The type of printer only
2. The software only
3. The type of printer and the software
4. The type of computer

13-8. A printer driver is a software routine that performs which of the following functions?

1. Defines the printer capabilities to the software
2. Defines the character set to the printer
3. Defines the graphics capability of the printer
4. All of the above

13-9. A separate printer driver is required for each type of printer that a software program will support.

1. True
2. False

13-10. The original ASCII codes contained what total number of control codes?

1. 16
2. 32
3. 48
4. 54

13-11. Which of the following ASCII codes (in decimal) will result in the printer performing a carriage return?

1. 10
2. 12
3. 13
4. 27

13-12. The ASCII ESCAPE code (27) when combined with other characters and sent to a printer is used for which of the following functions?

1. To tell the printer to start printing
2. To initiate enhanced features of many printers
3. To stop all printer operations
4. To change the printer driver of the software

13-13. Printing each letter or character on a line based on the character's actual size is known as which of the following printer spacing methods?

1. Proportional spacing
2. Prearranged spacing
3. Relative spacing
4. Fixed spacing

13-14. A font describes which of the following characteristics of the type?

1. Style of the typeface only
2. Size of the typeface only
3. Both the style and size of the typeface
4. All the characters a printer is capable of printing

13-15. The printer measure that is equal to 1/72 inch is known by what term?

1. Elite
2. Pica
3. Pitch
4. Point

13-16. Which of the following print modes is used to print text across the length of a standard size sheet of paper?

1. Landscape mode
2. Portrait mode
3. Picture mode
4. Graphics mode

13-17. Which of the following is the most widely used serial interface between a personal computer and a printer?

1. EIA interface
2. Centronics® interface
3. RS-232 interface
4. RS-323 interface

13-18. Parallel-to-serial data conversion for use in serial interfaces of personal computers is accomplished by which of the following circuits?

1. RS-232 interface
2. Universal asynchronous receiver/transmitter (UART)
3. Centronics interface
4. Serial converter

13-19. In a serial interface that uses software handshaking, what minimum number of pins must be connected?

1. Five
2. Two
3. Three
4. Four

13-20. The Centronics parallel interface uses what (a) connector at the computer end of the cable and what (b) connector at the printer end of the cable?

1. (a) 36-pin Centronics
   (b) 36-pin Centronics
2. (a) 36-pin Centronics
   (b) DB-25 subminiature
3. (a) DB-25 subminiature
   (b) DB-25 subminiature
4. (a) DB-25 subminiature
   (b) 36-pin Centronics

13-21. The Centronics parallel interface is which of the following types of interface between the computer and the printer?

1. 8-bit, one-way
2. 8-bit, two-way
3. 16-bit, one-way
4. 16-bit, two-way

13-22. Which of the following is NOT a function of the control panel on a printer?

1. Activating the print head
2. Providing operator selectable fonts
3. Initiating the self-test function
4. Controlling whether the printer is online or offline

13-23. Continuous paper with perforated holes on each side is designed to be used with which of the following paper-feed methods?

1. Friction feed
2. Tractor feed
3. Sheet feeder
4. Pressure feed

13-24. The paper-feed motor in a tractor-feed printer is usually which of the following types of motors?

1. Stepper
2. Synchro
3. Servo
4. Reduction

13-25. Which of the following paper-feed methods uses one or more pressure rollers to move paper through the printer?

1. Tractor feed
2. Friction feed
3. Sheet feeder
4. Both 2 and 3 above

13-26. Which of the follow lists includes only impact printers?

1. Chain, band, and laser
2. Drum, dot matrix, and inkjet
3. Inkjet, laser, and daisy wheel
4. Chain, band, drum, dot matrix, and daisy wheel

13-27. The maximum number of characters that a drum printer can print on one line is determined by which of the following factors?

1. The type of software being used
2. The number of rows on the drum
3. The number of columns on the drum
4. The type of computer being used

13-28. A drum printer has which of the following number of hammers?

1. One for each column on the drum
2. One for each line the printer is capable of printing
3. One for each letter of the alphabet and seven for special characters
4. Two for each letter of the alphabet (one for uppercase and one for lowercase) and seven for special characters

13-29. The quality of print produced by a dot matrix printer is directly related to which of the following factors?

1. The number of print wires in the print head
2. The number of characters being printed
3. The size of the print head
4. The type of font being printed

13-30. The print wires in a dot matrix print head are driven by which of the following devices?

1. A relay
2. One solenoid that drives all the print wires
3. An individual solenoid for each print wire
4. A hi-stable multivibrator

13-31. A dot matrix print head is mounted on a heat sink for which of the following reasons?

1. To dissipate heat generated by the moving print wires
2. To dissipate heat generated by the solenoid drivers
3. To dissipate heat generated by the printer's power supply
4. To heat up the print wires to the proper operating temperature

13-32. A nine-pin dot matrix print head prints in near letter quality mode by making two passes for each line, advancing the paper which of the following distances before the second pass?

1. One-half line
2. One-half letter space
3. One-half dot space
4. One dot space

13-33. A 24-pin print head prints near letter quality faster and with greater resolution than a 9-pin print head for which of the following reasons?

1. It prints two characters at a time
2. It prints larger dots
3. It prints more dots per character only
4. It has two columns of offset print wires and prints smaller dots

13-34. The print head of a dot matrix printer is moved across the length of the platen by a wire, belt, or chain that is connected to which of the following devices?

1. Paper motor
2. Platen motor
3. Print head motor
4. Carriage motor

13-35. The daisy wheel printer has which of the following advantages over the dot matrix printer?

1. It prints letter quality
2. It can print carbon copies
3. Both 1 and 2 above
4. It prints faster than a dot matrix printer

13-36. The laser printer is what type of printer?

1. Electrostatic
2. Electrosensitive
3. Electrothermal
4. Impact

13-37. Laser printers are classified as which of the following class of printer?

1. Character printer
2. Line printer
3. Daisy printer
4. Page printer

13-38. The photosensitive aluminum cylinder in a laser printer is the

1. primary corona
2. laser source
3. toner drum
4. print drum

13-39. The laser diode generates a single wavelength light in bursts of one millionth of a second or less.

1. True
2. False

13-40. The erase lamps have which of the following effects on the print drum?

1. They apply a positive charge to the drum
2. They apply a negative charge to the drum
3. They neutralize any charge on the drum
4. They neutralize any toner on the drum

13-41. During a laser printer's print cycle, a charge of -600V is applied to the print drum by which of the following devices?

1. Erase lamps
2. Primary corona wire
3. Secondary corona wire
4. Laser beam

13-42. The laser beam's horizontal scan across the drum is developed by which of the following devices?

1. Rotating hexagon mirror
2. Laser diode carriage motor
3. Laser beam lens assembly
4. Laser beam shutter

13-43. What effect, if any, does the laser beam striking the print drum have on the print drum?

1. The area of the print drum becomes positively charged
2. The area of the print drum becomes negatively charged
3. Any charge on the print drum becomes neutralized
4. None; the laser beam has no effect on the print drum

13-44. The toner used in a laser printer consists of a fine powder containing metal, dyes, and

1. ink
2. sand
3. glass
4. plastic

13-45. As the print drum rotates past the toner reservoir, which of the following events occurs?

1. The excess toner on the drum is deposited into the reservoir
2. The toner is attracted to the positively charged areas of the drum
3. The toner is attracted to the negatively charged areas of the drum
4. The toner coats the entire drum

13-46. The transfer corona is used for which of the following functions?

1. It charges the toner to enable the toner to be transferred from the reservoir to the drum
2. It charges the drum to enable the toner to be transferred from the reservoir to the drum
3. It charges the drum to enable the transfer of toner from the drum to the paper
4. It charges the paper to enable the transfer of toner from the drum to the paper

13-47. The toner is permanently bonded to the paper by which of the following means?

1. The registration rollers apply pressure to the paper
2. The fusing rollers apply heat and pressure to the paper
3. The transfer corona applies heat to the paper
4. The primary corona applies heat to the paper

13-48. A laser printer that produces a printout with blotches evenly spaced every 1.75 inches is probably caused by a defect in which of the following components?

1. Upper registration roller
2. Lower registration roller
3. Transfer roller
4. Lower fusing roller

13-49. A laser printer with a scratched print drum can be repaired by performing which of the following actions?

1. Remove the print drum and polish the scratch out
2. Replace the print drum only
3. Replace the cartridge
4. Replace the laser diode

13-50. To print a font using a Hewlett-Packard or compatible laser printer, the font definition bit map provides the printer with which of the following information?

1. Whereto place the dots to print the characters
2. Whereon the page the character is to be printed
3. Whereon a line the character is to printed
4. Whereon the page to print graphic pictures only

13-51. Soft fonts are font bit maps that are handled in which of the following ways?

1. They are loaded into the computer's memory and transferred to the printer when needed
2. They are resident in the printer's ROM
3. They are contained in ROM cartridges that plug into the computer
4. They are contained in RAM cartridges that plug into the printer

13-52. PostScript® printers are capable of printing a typeface in different sizes by using which of the following methods?

1. A different bit map for each size of character to be printed
2. A mathematical definition for each typeface and mathematically scaling the characters to the desired size
3. A mathematical definition for each size character
4. A bit map for one typeface that is mathematically scaled to change the size

13-53. Electrothermal printers use the heat of wires or pins to burn images onto plain paper.

1. True
2. False

13-54. Ink jet printers form images on the paper by which of the following methods?

1. Spraying ink on the paper through a stencil to form the character
2. Spraying ink on the paper with the print head moving to form each character
3. Spraying ink on the paper in a series of dots to form the characters similar to a dot matrix printer
4. Electrostatically charging the paper to attract the ink to the proper position to form the character

13-55. The ink in an ink jet printer is sprayed onto the paper by which of the following methods?

1. By using a pneumatic pump
2. By using piezoelectric crystals to squeeze a nozzle tube
3. By using small heaters to expand an air bubble and force the ink out of the nozzle
4. Either 2 or 3 above, depending on the printer

13-56. An analog signal has which of the following characteristics?

1. It varies continuously with time
2. Each bit position represents a portion of the overall quantity
3. The codes of ONES and ZEROS indicate a value at a particular instant of time
4. The summation of the set bits is normally the quantity to be represented

13-57. Analog signals representing analog quantities and binary numbers representing digital quantities have which of the following characteristics in common?

1. They both vary continuously with time
2. They both can express an infinitely large quantity
3. They both express values As a summation of set bits
4. They both express values within a given set of limits

IN ANSWERING QUESTIONS 13-58 THROUGH 13-60, REFER TO FIGURE 13-1 ON PAGE 13-2 OF THE TEXT.

13-58. To indicate a range of values of 10 miles, what would the amplitude of the analog signal be in volts peak to peak?

1. 7
2. 11
3. 12
4. 20

13-59. What would the digital quantity bit pattern contain to indicate a range of 12 miles?

1. 00011
2. 01100
3. 10010
4. 11000

13-60. To indicate a range of 25 miles, the analog signal will be what number of (a) volts peak to peak while the digital quantity bit pattern will contain what (b) bit pattern?

1. (a) 25 (b) 11001
2. (a) 25 (b) 11100
3. (a) 27 (b) 11001
4. (a) 27 (b) 11100

13-61. The reference signal for an analog to digital conversion is normally equal to which of the following values?

1. The average value of the analog signal
2. The minimum value of the analog signal
3. The maximum value of the analog signal
4. The maximum value of the transmitted data

13-62. In which of the following conversion operations is the input analog signal tested repeatedly over a period of time?

1. Encoding
2. Sampling
3. Decoding
4. Quantization

13-63. Which of the following conversion operations reduces the result of the conversion to a binary code acceptable to digital equipments?

1. Encoding
2. Sampling
3. Decoding
4. Quantization

13-64. Which of the following conversion operations rounds out the conversion to the value of the LSB?

1. Encoding
2. Sampling
3. Decoding
4. Quantization

13-65. Which of the following conversion operations is performed only when a conversion is required?

1. Encoding
2. Sampling
3. Decoding
4. Quantization

13-66. In natural binary code, which of the following bit positions has the greatest weight or represents the largest value?

1. BAM
2. LSB
3. MSB

13-67. Binary angular measurement uses what binary code?

1. Natural binary code
2. Hexadecimal
3. Gray code
4. BCD

13-68. BAM data words are designed to indicate what maximum number of degrees of angular measurement?

1. 45
2. 90
3. 180
4. 360

13-69. When only the MSB of a BAM word used to transmit anon-angular value is set, what is the quantity indicated?

1. The minimum value that can be transmitted
2. The maximum value that can be transmitted
3. One half of the minimum value that can be transmitted
4. One half of the maximum value that can be transmitted

13-70. Binary-coded decimal uses what total number of bit positions to represent a single decimal digit?

1. One
2. Two
3. Eight
4. Four

13-71. Which of the following binary codes is designed to change from one value to the next with only one bit change?

1. Hexadecimal
2. BCD
3. Gray code
4. Natural binary code

13-72. A torque system has which of the following characteristics?

1. It provides a turning force to drive light loads
2. It provides an electrical output used to control the power that performs mechanical work
3. It is the combination of a synchro transmitter and Synchro receivers
4. It is a variety of rotary, electromechanical, position sensing devices

13-73. A synchro system has which of the following characteristics ?

1. It provides a turning force to drive light loads
2. It provides an electrical output used to control the power that performs mechanical work
3. It is the combination of a synchro transmitter and synchro receivers
4. It is a variety of rotary, electromechanical, position sensing devices

13-74. Which of the following is the primary characteristic of a control synchro system?

1. It provides a turning force to drive light loads
2. It provides an electrical output used to control the power that performs mechanical work
3. It is the combination of a synchro transmitter and synchro receivers
4. It is a variety of rotary, electromechanical, position sensing devices

13-75. The term synchro has which of the following meanings?

1. It provides a turning force to drive light loads
2. It provides an electrical output used to control the power that performs mechanical work
3. It is the combination of a synchro transmitter and synchro receivers
4. It is a variety of rotary, electromechanical, position sensing devices